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Friday, July 1, 1898.

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*ON A NEW CONSTITUENT OF ATMOSPHERIC AIR.**

This preliminary note is intended to give a very brief account of experiments which have been carried out during the past year to ascertain whether, in addition to nitrogen, oxygen and argon, there are any gases in air which have escaped observation owing to their being present in very minute quantity. In collaboration with Miss Emily Aston we have found that the nitride of magnesium, resulting from the absorption of nitrogen from atmospheric air, on treatment with water yields only a trace of gas; that gas is hydrogen, and arises from a small quantity of metallic magnesium unconverted into nitride. That the ammonia produced on treatment with water is pure has already been proved by the fact that Lord Rayleigh found that the nitrogen produced from it had the normal density. The magnesia, resulting from the nitride, yields only a trace of soluble matter to water, and that consists wholly of hydroxide and carbonate. So far, then, the results have been negative.

Recently, however, owing to the kindness of Dr. Hampson, we have been furnished with about 750 cubic centimeters of liquid air, and, on allowing all but 10 cubic centimeters to evaporate away slowly, and, col-

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*Paper read before the Royal Society on June 9th by Professor William Ramsay, F. R S., and Morris W. Travers. Received by the Society June 3d. Reprinted from *Nature.*